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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,708	12/11/2001	Christopher Francis Michael Twigge-Molecey	R1095/20004	4439

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EXAMINER	
STERRETT, JONATHAN G	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/016,708	TWIGGE-MOLECEY, CHRISTOPHER FRANCIS MIC	
	Examiner	Art Unit	
	Jonathan G. Sterrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This **Final Office Action** is responsive to applicant's amendment filed May 16, 2006. Applicant's amendment of December 19, 2005 amended **Claims 1-6, 9 and 10. Claim 8** is cancelled and **Claims 11-31** have been added.

Currently **Claims 1-7** and **9-31** are pending.

Response to Arguments

2. The applicant argues on page 15 that Shane does not address assigning a weight to each of said categories.

The examiner respectfully disagrees.

On page 644 paragraph 4, Shane teaches the need to appropriately weight the individual categories so that the total sustainability metric is not unduly influenced (e.g. Shane teaches having categories neither underweighted nor overweighted – i.e. having an appropriate weighted influence on the final score – please see the 35 USC 103 rejection below. The examiner notes that this limitation is also indefinite re the 35 USC 112 rejection below.

3. The applicant argues on page 15 that Shane does not teach aggregating a score for each category.

The examiner respectfully disagrees.

The limitation states that indicator scores are aggregated for the at least one indicator score in each category. Since Shane teaches at least one indicator for each

category, the compilation of indicator scores to form an aggregate score is simply that individual indicator score.

4. The applicant argues on page 15 that Shane does not teach compiling the aggregate categories scores for the categories to generate a sustainability score representative of the impact of the activity of the enterprise or institution on sustainability.

The examiner respectfully disagrees.

On page 655 para 6, Shane teaches that his individual scores may be combined (i.e. added), and goes on to state that a maximum score for his evaluative approach would be "20". Thus, Shane teaches generating a single sustainability score that is indicative of the urban area's (i.e. an institution, since Shane teaches that urban areas are represented and controlled by local governments, in the example of Vancouver, the institution is the Greater Vancouver Regional District, the GVRD – see page 656 para 2).

5. The applicant argues on page 16 that Shane does not meet the limitation of claim 2 because Shane does not identify the indicators in the categories for each step.

The examiner respectfully disagrees.

On page 661 Shane illustrates four different charts showing how the various sustainability categories change over time. Creating these four different charts requires identifying the indicators since they are used each time. The limitation of identifying

different indicators for a same or different urban area is not recited in the claim. Even so, in Table 2, Shane teaches a backup set of categories and indicators of sustainability, because Shane does teach that the set of sustainability metrics may be different, depending on the particular urban area – see page 645 para 2 discussion on 'alternative metrics').

6. The applicant argues on page 16 that Shane does not meet the limitation of claim 6 because Shane does not teach that a capital project may comprise the specific activity whose impact on sustainability is being assessed.

The examiner respectfully disagrees.

On page 654 paras 4, 5 and 7, Shane teaches that urban development includes plans for transportation development to address sustainability. Furthermore, Shane teaches one page 658 para 1 that the city of Vancouver has a light rail project (i.e. capital project, the Sky Train) to improve transportation aspects of sustainability. While Shane does not teach that a capital project is the sole aspect of sustainability being assessed, it is one aspect that is assessed in terms of sustainability – see Table 1 "Transportation" category). The claim limitations cite "comprising" and not "consisting" and furthermore do not include the term "specific activity".

7. The applicant's arguments regarding Claim 1 on page 17 are moot in view of new grounds of rejection.

8. The examiner notes on page 6 of the previous Office Action that Official Notice was taken. Since this Official Notice was not traversed, the examiner notes that the subject of the Official Notice is admitted prior art.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 1-7 and 9-31** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **Claim 1**, the limitation is cited "assigning a weight to each of said categories". However, no subsequent steps in the method of Claim 1 nor the dependent claims reference using the weighting of categories to impact the overall sustainability metric. Step (g) notes that the aggregate scores for the categories are compiled to generate a composite sustainability score, but it is not clear that this includes the weights assigned to the categories. Therefore the claim is indefinite.

Regarding **Claim 4**, the limitation "previously obtained values of the indicator quantity" is cited. There is insufficient antecedent basis for the limitation "indicator quantity" in the claim.

Claims 2-7 and 9-31 depend on **Claim 1** and are therefore indefinite for the reasons cited for **Claim 1** above.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. **Claims 1-7, 9-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shane.**

Shane, A Megan; Graedel, Thomas E.; "Urban Environmental Sustainability Metrics: A Provisional Set", Sept 2000, School of Forestry and Environmental Studies, Yale University, New Haven, CT, 06511, Journal of Environmental Planning and Management, 43, 4; ABI/INFORM Global, pp.643-663. (hereinafter **Shane**).

Regarding **Claim 1**, Shane teaches:

(a) identifying a plurality of categories which together are representative of the impact of said activity on sustainability;

Page 644 paragraphs 2 and 3, a plurality of definable categories are identified which together represent the sustainability of a city's growth, i.e. the city's impact on sustainability. See also Tables 1 and 2 for a plurality of definable indicators.

(c) for each said category, identifying at least one quantifiable indicator which is associated with that category and which affects the impact of said activity on sustainability.

Table 1 page 648, each category contains at least one quantifiable indicator (e.g. the category "air" is measured as micro gram of ozone per cubic meter. Since these categories are environmental measures, they are measuring the impact of a city on the environment, i.e. sustainability.

(d) analyzing data to assign a value to each of the indicators;

Figure 1, air data is analyzed to assign a value for the various indicators of the Air Quality Index. These indicators are CO, NO2, O3, SO2, VOC and particles. The other indicators also require analysis of data to assign a value.

(e) converting the value of each said indicator to an indicator score; and

Figure 1, the above air quality indicators are converted into an indicator score.

Page 659 Table 3, each of these indicators are converted into a score based on how they compare with a goal measuring environmental efficiency.

(f) for each said category, compiling the indicator scores for the at least one indicator associated with that category to generate an aggregate score for that category

Page 655 para 6 line 1-7 & Table 1. The scores for each category (of which there is at least one indicator – for example water use per capita per day is measured as low, medium or high) are compiled to generate an aggregate score for that category.

(g) compiling the aggregate scores for said categories to generate a sustainability score representative of the impact of the activity on the sustainability of said enterprise or institution.

Page 655 para 6 line 5-8 & 8-11 & Figure 2. The scores for the categories are summed up to provide a sustainability score for the impact of activities that have environmental impact. In this case, the sustainability metric for a city is measured, e.g. to provide an evaluation of how sustainable the city is towards its goal.

Shane does not teach assigning a weight to each category, however in paragraph 4 of page 644, Shane does teach that the different categories should not underweight or overweight the final score. This suggests that there is a need to appropriately weight the individual category to appropriately contribute to the total sustainability metric.

While Shane teaches developing a composite metric to indicate overall sustainability, Shane does not teach:

(b) assigning a weight to each of said categories;

However, assigning weights to give some categories a greater impact on a total composite metric is old and well known in the art. This is done because some categories, which individually have a greater impact on the total, receive larger weights so that the final score is a more accurate reflection of the impact of those individual scores on the total.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding using a composite category score to indicate sustainability, to include the step of assigning a weight to each of said categories, because it would provide a more accurate composite score by reflecting the different impacts that various individual metrics have on the total composite score.

Regarding **Claim 2**, Shane teaches:

periodic repetition of steps (c) to (g) to determine how the impact of the activity changes over time.

Figure 3 illustrates how the indicator scores of the urban activity of Vancouver Canada changes over time as measured periodically from 2000 to 2005, 2010 and 2015. These figures would require the periodic repetition of the steps above to generate the illustrations of Figure 3.

Regarding **Claim 3**, Shane teaches:

wherein the value of at least one of said indicators is converted to an indicator score by comparing the value of the indicator obtained in step (d) to a standard value for said indicator.

Table 3, the indicator scores for Vancouver Canada compare their actual scores to a goal. Depending on the comparison, a score is recorded depending on how favorable (or unfavorable) the comparison was for the standard indicator.

Regarding **Claim 4**, Shane teaches changes occurring in the sustainability metrics (indicator scores) and the need to improve sustainability over time but does not teach:

wherein, after at least one repetition of steps (c) to (g), the indicator score for at least one of said indicators is obtained by comparing the value obtained in step (d) or the indicator score obtained in step (e) with previously obtained values of the indicator quantity and the indicator score, respectively.

However, Official Notice is taken that it is old and well known in the art of metrics to determine a score based on whether there has been improvement in that score (including based on other factors that would impact the score). This incorporates into the metric the concept of whether there has been improvement or not.

It would have been obvious to one of ordinary skill in the art at the time of the invention to obtain an indicator score for an indicator by measuring change in the indicator's score because it would provide a way to easily incorporate an indication of improvement into the final metric.

Shane teaches that organizations need to continue to improve their sustainability scores by improving the various indicator scores that make up their overall sustainability score. Shane shows a hypothetical improvement in the sustainability scores for Vancouver BC going to 2015.

Ensuring that metrics improve is a goal of management. Rewarding organizations for improving metrics is understood by management as a key way to ensure continued improvement. Measuring change in performance is an obvious modification over Shane based on what is old and well known in the art of metrics and meets the claim limitations with a reasonable expectation of success.

Regarding **Claim 5**, Shane teaches:

wherein said categories are selected from the group consisting of:

energy, **emissions**, **water use**,

Page 648 Table 1, Air (i.e. emissions), energy and water use per capita. The data represent activity that is an infrastructure development activity (note example for infrastructural development for the city of Vancouver).

materials, Table 1, waste generated per capita is a measure of materials.

by-products, Table 1 – waste generated per capita

toxics, Table 2, sulfur dioxide is a toxic emission resulting in acid rain.

land use and restoration, Table 1 – population density

health and safety, page 647 para 4, water quality is an important health and safety category measuring sustainability.

community involvement and, Table 1 – UNDP's Human development index – general environmental management is an indication of community involvement.

community impacts and, Table 2, Livability – measure of happiness of residents

other indicators of local relevance, Table 2, Overall level of environmental understanding among residents.

While Shane does not teach measuring effluent waste as an input to a sustainability index, it is old and well known in the art that effluent waste does have an impact on the environmental impact from human activity.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane to include effluent as a category in a composite sustainability metric, because it would account for the known impact that fluid waste has on sustainability.

While Shane does not teach including 'health and safety' as a category input to a sustainability metric, Shane does teach that water quality is an important metric input into a sustainability index. Shane teaches that water is an important element to sustain life, and should be accounted for in managing sustainability (see page 647 para 4 – note that Shane requires including water quality in an environmental management plan).

It would have therefore been obvious to one of ordinary skill in the art to further modify the teachings of Shane to include water quality as a health and safety category input into a sustainability metric, because it would ensure the sustainability metric accounted for a known element necessary to support life.

Regarding **Claim 6**, Shane teaches:

wherein the industrial or infrastructure development activity comprises a capital project designed to change or expand the operation of an existing facility

Page 654 paragraphs 4, 5 and 7, activities impacting the operation of the existing facility (i.e. an urban area) include plans (i.e. capital projects) for improving transportation (i.e. the transportation section of the plan), energy and the building plan for addressing population density. These would all comprise a capital project to develop the infrastructure.

Claim 7 recites limitations similar to those addressed by the rejection of **Claim 4**, and is therefore rejected under the same rationale.

Regarding **Claim 9**, Shane does not teach:

wherein sustainability scores for a number of facilities within a division or an organization are aggregated to obtain an aggregate score for the division or the organization.

However, aggregating scores to come up with an aggregate score to measure a group is a technique that is old and well known in the art. This provides an easy-to-use technique to combine a number of scores into an aggregate total.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding providing an aggregate score for a facility (i.e. a city) to further include aggregating the sustainability scores for a group of facilities, because it would provide an easy-to-use way to score the group of facilities with respect to sustainability.

Regarding **Claim 10**, Shane teaches:

wherein the aggregate scores are monitored over time to monitor compliance with policies and progress towards sustainability.

Figure 3 shows how the aggregate scores are monitored over time to monitor compliance with policies and progress towards sustainability.

Regarding **Claim 11**, Shane teaches:

wherein the impact being assessed is the environmental impact of the activity.

Page 644 para 2, metrics are to be developed to assess the environmental impact of urban development (i.e. the activity).

Regarding **Claim 12**, Shane teaches:

wherein the categories relating to the environmental impact include one or more of: materials, energy, emissions, effluents, by-products, toxics, water use and land use.

Page 644 para 2, four sectors of environmental impact include waste, resources, planning and livability. These sectors are further broken down into the categories of Table 1 and Table 2 –solids is expressed as waste per capita, i.e. by-products.

Regarding **Claim 13**, Shane teaches:

wherein the indicators associated with the materials category include one or more of: process yield/raw material usage; and material costs.

Table 1, waste generated per capita is a raw material usage.

Regarding **Claim 14**, Shane teaches measuring as an indicator, energy usage per capita, but not energy use per ton of product.

However, it is old and well known in the art to determine an environmental impact by energy use per ton of product as an efficiency measure and thus the impact that making a product has in consuming energy.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane to include measuring energy efficiency in producing a product, because it would measure the environmental impact that product had by measuring the product's impact on energy consumption.

Regarding **Claim 15**, Shane teaches where emissions include per Table 2 where SO2 emissions per person per year. Shane further teaches on page 646 para 4, that SO2 emissions are an indicator of industrial activity (i.e. including producing products) Shane does not teach where the indicator associated with the emissions category is SO2 per ton of product.

However, it is old and well known in the art to determine an environmental impact by SO2 generated per ton of product as an pollution measure and thus the impact that making a product has generating a pollutant.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane to include measuring SO2 generation in

producing a product, because it would measure the environmental impact that product had by measuring the product's impact on SO2 pollution emission.

Regarding **Claim 16**, Shane teaches the importance of measuring water quality and that part of the measurement includes measuring toxic concentrations in the water (see page 647 para 5, "Significant measures of water quality include...concentrations of toxins"). Shane teaches that industrial economies' water consumption (i.e. including producing products, since the economies are industrial as opposed to agricultural – see page 647 para 3) While Shane does not teach an effluent category including liquid volume per ton of product, this measurement is old and well known in the art of pollution measurement as impacting the toxic concentrations in water.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding taking the importance of clean water on sustainability in an industrial (i.e. goods producing) economy, to include the step of including an effluents indicator measuring liquid volume of pollution per ton of product produced, because it would provide a way to measure the impact of that industrial activity on water quality and thus sustainability.

Regarding **Claim 17**, Shane teaches where solid wastes per capita include the need for disposal (i.e. suggesting the waste is hazardous) or for recycling (page 650 para 1). Although Shane does teaches waste in pounds generated per capita, Shane does not teach:

wherein the indicators associated with the by-products category include one or more of: hazardous wastes; saleable by-products and percent recyclable by-products.

However, it is old and well known in the art of solid waste disposal to measure saleable waste (i.e. recycled materials). Shane teaches that solid waste is a contributor to disposing of waste contributes negatively to the environmental conditions in a city (i.e. smog and traffic – see page 650 para 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shane's teachings regarding measuring waste per capita to include measuring saleable by-products from the recycled solid waste, because it would provide a measure of the environmental impact of the solid waste that is generated.

Regarding **Claim 18**, Shane teaches:

wherein the impact being assessed is the social impact of the activity.

Table 1, General environmental management is a social impact of the activity (i.e. management of the urban development). – See also Table 2, Environmental

education is a measure of the level of understanding among residents (i.e. a social impact of the environmental activity).

Regarding **Claim 19**, Shane teaches:

wherein the categories relating to the social impact include one or more of: health and safety of workers; community involvement; and community impacts.

Table 2, community impacts include level of environmental understanding and measuring the happiness of residents.

Regarding **Claim 20**, Shane teaches where livability (including human factors) is a part of measuring sustainability (page 644 para 2). While Shane does not include a hazard indicator per a health and safety category, Shane does teach that water quality with respect to items that are hazardous in the water (e.g. concentration toxins – see page 647 para 4, here Shane references other work done to provide health and safety indicators re water quality hazards). Shane therefore teaches:

wherein the indicators associated with the health and safety category include one or more of: respiratory, noise, radiation and hazards.

Page 647 para 4, water quality as a sustainability 'health and safety category' includes the indicators of bacterial growth, turbidity, acidity, nutrient concentrations and concentrations of toxins.

Regarding **Claim 21**, Shane teaches that qualitative measures for measuring sustainability should be used (page 653 paragraph 5). Shane further teaches that this qualitative measurement should include the level of concern an urban area (i.e. community) has for it's environmental state. Shane does not teach measuring sustainability in terms of community involved by measuring the number of meetings or number of participants. However, it is old and well known in the art to measure involvement by measuring the number of participants in an activity. This shows how many participants out of a total are active, thus effectively and simply showing a level of involvement (e.g. number of residents attending a zoning meeting).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding taking into account the level of concern an urban area has in its environment, to measure the number of participants in a meeting regarding environmental issues, because it would effectively show the level of participation (i.e. community involvement) that an urban area (i.e. a community) had in measuring the social impact of sustainability.

Regarding **Claim 22**, Shane teaches:

wherein the indicators associated with the community impacts category include one or more of: health; esthetics; economics; employment; and **quality of life**.

Table 2, Livability – measure of happiness of residents (i.e. quality of life).

Regarding **Claim 23**, Shane teaches:

wherein a plurality of said indicators are associated with one or more of said categories.

Tables 1 and 2 provide for a plurality of indicators that are associated with a plurality of categories (i.e. one or more categories).

Regarding **Claim 24**, Shane teaches:

wherein said step of compiling said indicator scores comprises adding said indicator scores.

Page 655 paragraph 6, the individual indicator scores are added to compile a total number that is representative of sustainability.

Regarding **Claim 25**, Shane teaches:

wherein the indicators are quantifiable by numerical values.

Page 655 paragraph 6, high, medium and low scores are quantified by numerical values so that a total composite sustainability metric can be calculated from the quantified indicator scores.

Regarding **Claim 26**, Shane teaches:

wherein the standard value is a government or industry standard for that value or a previously measured value for said indicator.

Page 659, Table 3, the air (O3) indicator is compared to a goal (i.e. an industry standard) to determine the value for the indicator. Other indicators are also compared to other standards to determine the indicator score.

Regarding **Claim 27**, Shane teaches:

wherein the industrial or infrastructure development activity comprises a plurality of urban developments;

page 661 paragraph 2, a variety of cities' urban development efforts are compared (e.g. London, New Delhi, Portland, Greenwich).

wherein said method determines the overall impact of the urban developments on sustainability; and

page 661 paragraph 2, these cities urban development is measured using the metrics to determine the impact of the cities' development on sustainability.

wherein said step of identifying said indicators is performed independently for each said urban development.

page 661 paragraph 1, different cities' efforts can be evaluated separately (i.e. independently) to determine the sustainability for those individual cities.

Shane teaches using his sustainability measurement method for measuring urban development. Shane teaches that urban development is comprised of a plurality of activities, all of which are measured for their impact on sustainability. Shane teaches

that capital projects themselves impact sustainability for an urban area (see page 658 paragraph 1 – here the planning for light rail development, i.e. a capital project, is discussed with regard to its impact on sustainability). Shane does not teach measuring capital projects themselves for their impact on sustainability.

However, it is old and well known in the art that capital projects have an impact on sustainability. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding measuring the impact of overall urban development on sustainability, to measure the impact of sustainability on capital projects, because it would provide a way to measure how those capital projects are impacting the overall sustainability measure.

Regarding **Claim 28**, Shane teaches:

wherein said plurality of projects comprises a first project for which a first group of indicators is identified and a second project for which a second group of indicators is identified; and wherein at least one member of the first group of indicators is not present in the second group of indicators.

page 661 paragraph 2, a variety of cities' urban development efforts are compared (e.g. London, New Delhi, Portland, Greenwich).

Page 645 paragraph 2, the use of alternative metrics (see also Table 2) means that some projects may use one metric where another may use another.

Regarding **Claim 29**, Shane teaches:

wherein said capital projects are carried out simultaneously.

Page 661 paragraph 2, assessments of the metrics for urban development in four cities are performed simultaneously (i.e. the urban development in these cities is simultaneous as the cities are evaluated with respect to sustainability).

13. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Shane** in view of **Andrews**, Clinton J; "Putting Industrial ecology into place: Evolving Roles for Planners", Autumn 1999, American Planning Association, Journal of the American Planning Association, Chicago, Vol. 65, Iss. 4, p.364, 12 pgs. (hereinafter **Andrews**)

Regarding **Claim 30**, Shane teaches a set of comprehensive metrics to provide a complete evaluation of sustainability utilizing a set of primary and alternative evaluation categories (Tables 1 & 2). Shane teaches where industry activities have an impact on sustainability (see page 646 para 3 – smog is an indication of pollution due to industrial activity, i.e. from industrial facilities). Shane further teaches that individual industrial activities impact sustainability (see page 658 paragraph 1 for a discussion of Vancouver's projects to add light rail and bicycle networks to impact sustainability) Shane does not teach:

wherein said enterprise or institution comprises a single industrial facility.

Andrews teaches the importance of analyzing the environment impact by taking into account locality effects, i.e. the impacts that specific, individual facilities have on planning for ecological impacts (page 5 para 2 line 5-10). Andrews further teaches that this approach incorporates economic considerations into sociological and ecological aspects (line 10 – economics incorporated into ecology and sociology). Andrews further develops this idea to teach that individual firms can provide an industrial ecosystem to exchange waste products economically (see page 6 para 2). Thus, individual sites can complement each other economically while reducing the production of wastes, thus positively impacting sustainability.

It would have been obvious to one of ordinary skill in the art, to modify the teachings of Shane, regarding providing a set of metrics to measure sustainability for urban development, to include the step of applying this sustainability measurement approach to industrial sites, because it would provide a comprehensive measure of that industrial site's impact on sustainability.

14. **Claim 31** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Shane** in view of Takahiro **Akita**, Agus Hermawan, "The sources of industrial growth in Indonesia, 1985-95: An input-output analysis", ASEAN Economic Bulletin. Singapore: Dec 2000.Vol.17, Iss. 3; pg. 270, 15 pgs. (hereinafter **Akita**)

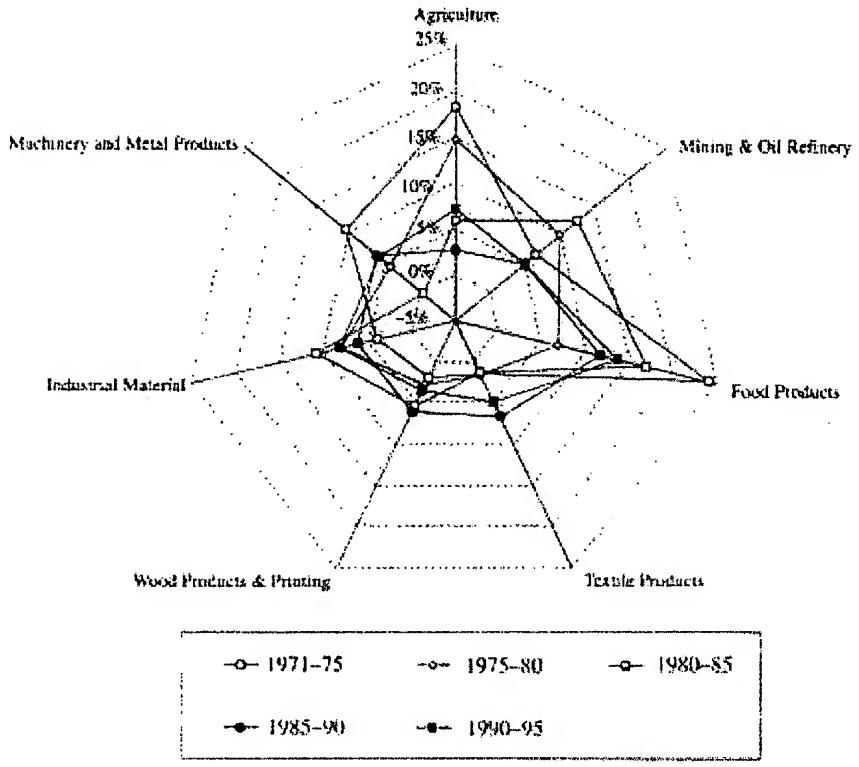
Regarding **Claim 31**, Shane teaches providing a graph for measuring sustainability so that changes in sustainability over time can be seen in the individual categories that make up sustainability and so that individual urban areas can be compared against each other (see page 661 Figure 3 and para 1).

Shane does not teach the use of what is commonly known as a 'radar chart' to display sustainability as per:

wherein the sustainability score comprises a graphic representation having a plurality of axes emanating from a common origin, and wherein the aggregate score for each category is plotted along one of the axes.

However, it is old and well known in the art to represent data on a radar chart, so that an instant comparison can be made amongst a plurality of metrics plotted on axis emanating from a common origin. Here is an example of a Radar Chart provided from Akita:

FIGURE 1
Changes in the Sources of Output Growth
by Sector



It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Shane, regarding using a chart to show relative changes in sustainability, to include the step of using a Radar Chart, as taught by Akita, Because it would provide a compact way to illustrate a number of factors simultaneously.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following document provides a comprehensive approach to measuring sustainability:

Odom, Sonja Lynn, "The sustainable systems analysis algorithm: A decision-support and evaluation methodology applied to promote sustainable industrial development", Ph.D., University of South Carolina, 2001, 300 pages; AAT 3036222.

The following document details a joint venture between Hatch Associates (assignee of the invention) and Applied Sustainability in 2000 to seek industrial synergies in realizing sustainability:

"Montreal", excerpted from the web on 5-18-06, www.csrp.com.au/database/ca/queb/index.html, pp.1-2.

The following document details a sustainability joint venture that the assignee (Hatch) formed in January 1999 (see page 6) to pursue sustainability in the context of industrial synergy.

Dias, Sabrina; Yates, Roger; "By-Product Synergy (BPS) – Advancing Cooperative BPS Programs Between Canada, Mexico and USA", September 2001, pp.1-53.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS

JGS 7-16-06

Primary Examiner
Art Unit 3623